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TRANSMITTAL FORM

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Total Number of Pages in This Submission

Application Number	09/736790
Filing Date	December 14, 2000
Patent Number	7023908
Issue Date	April 4, 2006
First Named Inventor	Tomas Nordstrom et al.
Art Unit	2638
Examiner Name	Emmanuel Bayard
Attorney Docket Number	S1022.80495US00

ENCLOSURES (*Check all that apply*)

- [ ] Fee Transmittal Form
- [ ] Fee Attached
- [ ] Amendment/Reply
- [ ] After Final
- [ ] Affidavits/declaration(s)
- [x] Request for Certificate of Correction
- [x] Certificate of Correction PTO SB-21
- [x] Page 9 of Application as Filed
- [x] Page 7 of 8/24/05 Amendment
- [ ] Reply to Missing Parts/ Incomplete Application
- [ ] Reply to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) _____
- [ ] Landscape Table on CD
- [ ] After Allowance Communication to TC
- [ ] Appeal Communication to Board of Appeals and Interferences
- [ ] Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- [ ] Proprietary Information
- [ ] Status Letter
- [x] Other Enclosure(s) (please Identify below):

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Certificate
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of Correction

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	WOLF, GREENFIELD & SACKS, P.C.		
Signature			
Printed name	James H. Morris		
Date	April 10, 2006	Reg. No.	34,681

Certificate of Mailing Under 37 CFR 1.8(a)

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as First Class Mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Dated: April 10, 2006

Signature: _____ (Gail Driscoll)

Docket No.: S1022.80495US00
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Tomas Nordstrom, Daniel Bengtsson and Olivier Isson	
Serial No.:	09/736790	Patent No. 7023908
Filed:	December 14, 2000	Issued: April 4, 2006
Patent No.:	7023908	
For:	DSL TRANSMISSION SYSTEM WITH FAR-END CROSSTALK COMPENSATION	
Examiner:	Emmanuel Bayard	
Art Unit:	2638	Confirmation No. 6611

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Dated: April 10, 2006

Gail Driscoll

REQUEST FOR CERTIFICATE OF CORRECTION PURSUANT TO 37 CFR 1.322

Attention: Certificate of Correction Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Upon reviewing the above-identified patent, Patentee noted typographical errors which should be corrected.

In the Specification:

At column 6, line 54 the line should read --LT-FEXT canceller has a simplified structure. In such an-- as it appears on page 9, line 14 of the application as filed.

In the Claims:

In claim 18, column 10, line 54 should read --far end crosstalk canceling circuit supplying a storage-- as it appears in claim 16 as allowed.

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The errors were not in the application as filed by applicant nor were they made in any amendments; accordingly no fee is required.

Transmitted herewith is a proposed Certificate of Correction effecting such amendment. Patentee respectfully solicits the granting of the requested Certificate of Correction.

Dated: April 10, 2006

Respectfully submitted,

By: _____

James H. Morris
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(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO.	:	7023908
APPLICATION NO.	:	09/736790
ISSUE DATE	:	April 4, 2006
INVENTOR(S)	:	Tomas Nordstrom, Daniel Bengtsson and Olivier Isson

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 6
line 54, should read --LT-FEXT canceller has a simplified structure. In such an--

Column 10
line 54, should read --far end crosstalk canceling circuit supplying a storage--

MAILING ADDRESS OF SENDER (Please do not use customer number below):
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APR 17 2006

precompensation circuit with the inverted matrices $H^{-1}(fj)$, the precompensation circuit sequentially calculating the products $H^{-1}(fj)*S(fj)$.

16. (Currently Amended) A far-end crosstalk canceling circuit for a data transmission system comprising a precompensation circuit multiplying, before transmission, a vector S = (Si), i = 1 to n, by a precompensation matrix such that the matrix product H*M is diagonal, H being a transfer matrix of a plurality of transmission channels defined by R = H*S, where R = (Ri), i = 1 to n, is the vector of the digital transmission symbols Ri respectively received by a modem; and

a data transmission system comprising a plurality of line termination modems transmitting discrete multitone symbols Si to corresponding network termination modems over n transmission channels, comprising:

a far-end crosstalk canceling circuit, canceling far-end crosstalk at the network termination side of said system; and

a line termination far-end crosstalk canceling circuit canceling far-end crosstalk at the line termination side of said system by estimating [[the]] an inverse of the transfer matrix H^{-1}_{up} of the plurality of the transmission channels in [[the]] an upstream direction, said line termination far-end crosstalk canceling circuit supplying [[the]] a storage circuit of said far-end crosstalk canceling circuit with $H= H^{-1}_{up}$.

17. (Previously Presented) A data transmission system comprising a plurality of line termination modems transmitting discrete multitone symbols Si to corresponding network termination modems over n transmission channels, comprising:

a far-end crosstalk canceling circuit according to claim 15 canceling far-end crosstalk at the network termination side of said system; and

a line termination far-end crosstalk canceling circuit canceling far-end crosstalk at the line termination side of said system by estimating the inverse of the transfer matrices $H^{-1}_{up}(fj)$ of the plurality of transmission channels in the upstream direction at tone fj, said line termination far-end crosstalk canceling circuit supplying the storage circuit of said far-end crosstalk canceling circuit with $H(fj) = H^{-1}_{up}(fj)$.

means 530, a modulo N counter 522 and has no equalizer. It is assumed that the NT side is provided with a sequence controller synchronized with the controller 34' and having the same sequence pattern.

The updating means 530 receives a value j0 from the modulo N counter 522 clocked by CKt and the signal Ckin delayed by delay 531. In updating/transmitting mode, the updating means 530 extracts on a rising edge of Ckin the component at frequency j0 of the received DMT symbol output by the FFT block 514. The updating means 530 compares the coefficient $H_{ioi}(fj0)$ with the last coefficient $H_{ioi}(fj0)$ previously obtained. If the absolute value of the difference is greater than a given threshold Thj0, which in general is a function of frequency fj0, the new coefficient is appended to a header and transmitted via multiplexer 520 to the LT modem Mi.

Turning back to figure 3B, similarly to the first embodiment, the columns of the matrices H(fj) can also be directly provided by an external LT-FEXT canceller as shown in figure 6. With the assumption of intra-frequency FEXT the LT-FEXT canceller has a simplified structure. In such an instance, as disclosed in the above cited copending application, the LT-FEXT canceller estimates the matrices $H_u^{-1}(fj)$ for $j = 1$ to N. These matrices can be used as the precompensating matrices H(fj).

Having thus described at least one illustrative embodiment of the invention, various alterations, modifications, and improvements will readily occur to those skilled in the art. Such alterations, modifications, and improvements are intended to be within the spirit and scope of the invention. Accordingly, the foregoing description is by way of example only and is not intended as limiting. The invention is limited only as defined in the following claims and the equivalents thereto.

What is claimed is: